



ZAMBIA

DAIRY ENTERPRISE INITIATIVE

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FINAL REPORT

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and
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ABBREVIATIONS

LOL	Land O’Lakes, Inc.
MCC	Milk Collection Center
NDCS	Namianga Dairy Co-operative Society
ZATAC	Zambia Agribusiness Technical Assistance Center
ZDEI	Zambia Dairy Enterprise Initiative
ZDPA	Zambia Dairy Processors Association

A. EXECUTIVE SUMMARY

In partnership with USAID/Lusaka, Land O'Lakes and the Zambia Agribusiness Technical Assistance Center (ZATAC) implemented the Dairy Enterprise Initiative (ZDEI), dedicated to improve the overall productivity and competitiveness of Zambia's dairy sector. The initiative focuses on three outcomes: 1) producers are organized into milk collection groups; 2) quality assurance systems and new product technologies are introduced to and adopted by the processing sector; and 3) milk and dairy product sales are increased through educational campaigns, industry-led domestic promotions and export market development. The initiative emphasized public-private alliances by other dairy stakeholders such as the Zambia Dairy Processors Association.

The project activities contributed results to the Zambia Mission's Strategic Objective 1 – *Increased Rural Incomes of Selected Groups*, more specifically, IRI.2 – Increased Contribution to Rural Non-farm Enterprises (RNFEs) to Private Sector Growth.

Key Highlights

The ZDEI program was very successful in its effort to link smallholder farmers to markets. The program greatly exceeded its targets in terms of raw milk sales by producer groups, milk sold by milk collection centers (MCCs), and volume of cooled milk received by processors. Overall, the program met or exceeded most of its targets. Selected highlights include:

- **Nine (9)** new milk collection centers with milk coolers were established and **three (3)** existing centers improved to enhance the development of an effective cold chain that ensures quality milk reaches the processing plants and quality products reach the market, providing market access to **601** smallholder dairy producers.
- The volume of milk marketed by producer groups is up from **246,097 liters in 2002** to **1,509,257 liters in 2004**, an increase of **513 percent**. This is attributed to the project's activities in best farming practices, an improved cold chain system from farm to processor and favorable seasonal conditions.
- As a result of program activities, participating farmers earned, on average, **US\$680** more than they earned in the pre-intervention period, underscoring the significance that dairy development can make to mitigate food insecurity at the household level. This additional income has provided many households the opportunity to support school-going children, increased the disposable income to purchase food for families who benefited directly from program activities, and created commercial activity around the milk collection centers for enterprises such as input supply.
- The volume of cooled milk received by processors was **1,509,257** liters, up from **73,829** liters in 2001.

- Total income generated by milk collection centers was **\$778,082** (against a target of **\$770,000**), while new income earned by smallholder dairy producers was **\$391,900**.
- Organized training, tours, and seminars assisted **2,020** smallholders, against a target of **1,200**.
- A **six percent (6%)** increase in per capita consumption of processed milk and other dairy products was recorded. The increase is attributed to the project's activities in dairy product development, promotional and educational campaigns targeting all consumers, and events sponsored through public private alliances by other dairy stakeholders such as Zambia Dairy Processors Association.
- Milk sales to dairy processors increased by **1.5 million liters** over the life of the project.
- **Fifteen (15)** new products were developed by 7 processors (no fortified products).
- **Nine (9)** processors have undertaken quality assurance measures through the program's assistance.
- Eighteen processors created a total of **110** new employment opportunities in the dairy industry.
- The DEI supported the establishment of the Zambia Dairy Processors Association (ZDPA) as a focal point for collaboration and policy report to increase sector competitiveness and productivity.

B. INTRODUCTION

Goal and Objectives

The program goal was to improve the overall productivity of Zambia's dairy industry and contribute to an increase in sustained rural incomes. The approach is to improve milk and dairy product demand, industry efficiency, and farm-level productivity throughout the dairy system.

Together with its local implementing partners, Land O'Lakes sought to improve overall productivity in Zambia's dairy industry by focusing on three key focus areas:

- Organization of producers into milk collection centers;
- Introduction of quality assurance systems and new product technologies to the processing sector; and,
- Aggressive sales strategies utilizing education campaigns, industry-led domestic promotions and regional marketing assessments to move finished products beyond Zambia's borders.

Geographic Focus and Target Groups

During the life of the program, ZDEI worked in eight districts: Choma, Choongwe, Kafue, Kalomo, Kanungula, Livingstone, Mazabuka, and Monze. The program worked with individual farmers, farmer groups, co-operatives, small-medium processors, service providers and other dairy industry groups.

Key Activities and Implementation Strategies

The interventions under ZDEI were grouped into three key areas: activities for enhancing raw product supply, product development and improvement, and an industry-led consumer marketing campaign.

1. Activities for Raw Product Supply Improvements

These activities focused on improving the overall productivity at the farm level for dairy producers and increasing raw milk quality. The interventions included strengthening farm-to-market infrastructure by clustering producers for the efficient delivery of technical assistance and training so that these producers directly participated in the dairy market. This was achieved through the development of milk collection and marketing linkages by a demand-driven process that enabled improvements to the access of lower-cost inputs and allowed cost efficiencies to prevail through group marketing efforts.

Training activities were designed to improve the management of the collection centers as well as increase productivity at the individual farm level, which would have an impact on increased rural incomes. Milk collection centers were assisted in developing a simple bookkeeping system that helped them operate as viable independent business units. The performance of the centers was monitored monthly using a standard monitoring sheet to

collect data that was used to generate information for program monitoring and improving intervention strategies.

Summary of Activities

With the aim of increasing the capacities of the milk collection centers, activities carried out under this component over the life of the project included:

- Establishment and/or strengthening of milk collection centers.
- Installation of cooling tanks and distribution of equipment.
- Training in raw milk testing and the preservation of raw milk quality.
- Milk collection, handling and bulking techniques for smallholders.
- Smallholder farmer mobilization and organization.
- Training in dairy production.
- Facilitating the development of supply and service linkages to producers.

2. Product Development and Improvement

The focus of these activities was to improve processors' ability to develop new products and deliver higher-quality, safe and affordable products to the marketplace. Development of an effective cold chain to ensure that high-quality milk reaches the processing lines was a key component in this category of activities. Other interventions included increasing processing efficiency and capacity utilization, product development and improvement, packaging improvement, quality assurance, product safety and certification of quality norms.

3. Industry-Led Consumer Marketing Campaign

The focus for these activities was to increase demand for quality dairy products through an aggressive promotional campaign to expand domestic and export market demand. The specific interventions during the life of the project included consumer research, promotional and education campaigns, and media campaigns.

Activities under this component were carried out in collaboration with the Zambia Dairy Processors' Association (ZDPA), which was established under the ZDEI. The program supported ZDPA with the design and implementation of marketing campaigns designed to increase milk consumption, which were meant to increase sales of milk and milk products. The program assisted in developing promotional and informative educational campaigns that focused on the health and nutritional benefits of dairy products. In addition, processors were advised on the importance of branding, advertising and promotion of their individual dairy products.

The program also provided technical assistance to ZDPA to develop the association into a self-governing body that could independently support the promotion of Zambian-produced dairy products to targeted consumer groups and also provide support to the members in various issues that affect the dairy industry as a whole. The annual June

Dairy Month activity was initiated by Land O'Lakes but is now led by other local organizations such as the Zambia Dairy Processors Association (ZDPA).

Specific activities included:

- **Consumer Research**

A comprehensive research study was carried out in January 2002 – March 2002 to determine the position of consumption levels and habits of milk and other dairy products in both rural and urban households.

The study provided a means for the project to plan activities based on the findings, which included, for both urban and rural consumers, the following:

- Dairy Product and Other Beverage Consumption
- Current vs. Childhood Consumption
- Reported Uses of Milk
- Health vs. Taste-Driven Consumption
- Brand Loyalty
- Knowledge of Health Benefits
- Attitudes and Impressions
- Media Preferences
- Household Activities

The study estimated urban household milk consumption at 15 liters per month and rural household milk consumption at 4 liters per month. The study further made the recommendations for promotional and educational campaigns, which were adopted by the program.

- **Promotional and Educational Campaigns**

ZDEI, in partnership with ZDPA, enlisted the services of promotional and experiential marketing organizations to conduct regional and national promotional activities to promote the nutritional benefits of consuming milk and dairy products via road shows, school programs, experiential marketing activities, and event-sponsored activities and sports sponsorships.

- **Road shows**

Road shows were used to offer communication to mass markets using entertainment as the mechanism to build excitement and to maintain interest and enthusiasm for the promoted products/services. The shows were conducted in the local language, which was instrumental to the success of the activity.

During the life of the program, 20 road shows were conducted in the following towns: Lusaka, Kasama, Ndola, Solwezi, Kabwe, Monze, Livingstone and Chipata. The road shows ran for a period of approximately three months (August 2002 – October 2002) and

used entertainment and music to promote the nutritional benefits of consuming dairy products to a target base that included all consumers (mother, youth and HIV/AIDS-affected consumers).

- **June Dairy Month Promotions**

Dairy month promotional campaigns were held in June 2002, 2003 and 2004. Activities were initiated and implemented in partnership with the Zambia Dairy Processors Association to stimulate interest and to educate consumers on the importance of drinking milk and consuming dairy products daily. The dairy month promotion also provided an opportunity for the members to promote the association and the various products produced and distributed by the members. Activities were designed around an interactive and dynamic theme that was fun and enjoyable for the target groups.

- **Media Campaigns**

Strategic media promotional campaigns were initiated to create top-of-mind awareness of the nutritional benefits of consumption. The promotion involved the airing of electronic ads on radio and TV highlighting specific nutritional benefits of consuming milk and dairy products. Media selection criteria were based on reach, listener frequency and coverage. Target groups were all consumers countrywide. The media promotions were scheduled in two phases.

- **Educational School Programs**

Educational programs were initiated to educate the youth on the nutritional benefits of dairy product consumption targeting school-going children aged five to thirteen years in rural and peri-urban areas. One hundred twenty (120) schools were targeted in Copperbelt and Lusaka Provinces respectively, and each school had an average of approximately 100 students. Educators went to school assemblies and talked about the nutritional benefits of consuming milk and other dairy products.

C. ACHIEVEMENTS

1. Raw Product Supply Improvements

The program sought to strengthen market infrastructure by clustering producers for the efficient delivery of technical assistance and training so that the producers directly participated in the dairy market through the development of collection and marketing linkages. This was to be accomplished via a demand-driven process that improved access to lower-cost inputs and improved cost efficiencies through group marketing efforts. Specifically, the program sought to establish milk collection centers including the procurement, storage and distribution of cooling tanks and other equipment through market-oriented loans.

Milk collection center establishment began in earnest in April 2002 after the completion of staff recruitment and signing of the sub-agreement with ZATAC Limited, which was the main consulting partner at the time. Up to September 2002, much of the work was organized around planning, farmer association identification and sensitization of the program goals to interested stakeholders.

Performance Targets

- 15 milk collection centers established/strengthened
- Total income of US\$770,000 for milk collection centers
- Total number of farmers trained in dairy production; farmers delivering milk to collection centers
- 3 U.S. companies providing supplies and services
- 30% increase in volume of cooled milk sales from MCCs to processors
- Decrease in bacteria counts of raw milk coming from milk collection centers
- 30% increase in overall producer group milk production

Results

• Milk collection centers

Total income generated by milk collection centers as of September 30, 2004, was \$778,082, against a target of \$770,000 for the program. This represents the value of raw product marketed by collection groups. Of this total value, the new income directly accruing to individual farmer members totaled \$391,900 by the end of the program. The program therefore met its target, contributing significantly to increase in the incomes of smallholder dairy farmers participating in the program.

• U.S. companies providing supplies and services

For equipment, including bulk cooling tanks and other milking equipment, the program budget could not support the requirements needed to fulfill the equipment needs when U.S. quotations were compared with other sources. By the end of the program, only one service provider had been used under the program.

- **Milk sales to processors**

The vertical linkage of producers (farmers) with processing and marketing operations was a significant focus of the program, which aimed at providing a guaranteed market through buying contracts that increased the profitability of the dairy enterprises.

However, it is worth noting that the increase in milk deliveries to the MCCs does not by the same proportion increase the milk delivered to the processors. Of the total deliveries to milk collection centers, only 54% were delivered to the processing plants.

- **Decrease in bacteria counts of raw milk coming from collection centers**

Improving milk hygiene and handling was an important activity of the program, and processing plants committed themselves to complementing the training activities for the program.

The program continued to work with existing milk collection centers (MCCs) to improve quality and hygiene. Most of this effort focused on minimizing delivery time between milking and delivery to the MCCs, provision and use of stainless steel collection cans for delivery to and from the MCCs, and training MCC staff on testing of farmers' milk at the MCCs. A challenge encountered with this indicator was the absence of previously existing collection methods, a situation which rendered "decrease in bacteria counts at newly established MCCs" ineffective as an indicator. The solution lay in training collection centers in the foregoing procedures and making them cognizant of maximum acceptable bacteria counts from their respective processor markets.

- **Number of farmers delivering milk to collection centers**

During the program period, 601 farmers were recorded as delivering milk to the ten (10) milk collection centers against a target of 1,000. However, the indirect beneficiaries well exceed 3,600 individuals through benefits incurred by members of the associations and cooperatives receiving support from the program.

Refer to the Milk Collection Centers table in Attachment B for detail on these indicators.

Table 1: Summary of Results – Raw Product Supply Improvement

RAW PRODUCT SUPPLY IMPROVEMENT			
Indicator	Target	Achieved	Remarks
Number of milk collection centers established or strengthened	15	12	9 new milk collection centers were established while 3 milk collection centers were strengthened through provision of technical support. The program was unable to meet its target due to the pullout of the implementing partner ZATAC Ltd., and also due to the fact that program implementation started later than had been initially anticipated.
Volume of raw milk marketed by producer groups	140,372 liters	2,769,440 liters	The total milk sold to the MCCs over the program increased by 2,015,837 liters. This does not include milk consumed at the farm level and quantities sold directly without passing through MCCs. Therefore volume of raw milk marketed by farmers is much higher than is being reported.
Number of U.S. companies providing supplies and services	3	1	Program budget could not support the requirements of bringing 3 U.S. companies on board as suppliers
Volume of cooled milk received by processors	73,829 liters	1,509,257 liters	Of the total deliveries to milk collection centers, only 54% were delivered to the processing plants.

RAW PRODUCT SUPPLY IMPROVEMENT			
Indicator	Target	Achieved	Remarks
Number of centers with improved milk quality	15	7	Training on milk handling and hygiene formed the basis for achieving this target. Quality standards were based on processor requirements, meaning only 7 centers were able to achieve below-target bacterial levels, resulting in price incentives from the processors involved.
Value of raw product marketed by collection groups	US\$770,000	US\$778,082	Only the value of raw milk marketed through the collection centers was recorded. Sales to other markets, for example, directly to vendors or neighbors, were not captured over the life of the project.
Number of farmers trained in dairy production	1,000	1,127	Number of farmers trained exceeded the program target. Milk collection centers provide services to more than those farmers who attended training regularly.

2. Product Development and Improvement

Land O'Lakes, through the Regional Processing Specialist and other short-term consultants, worked with selected processors on the development of new products. These products included cheeses, yoghurt and other fermented products, fortified dairy products, and products with new package or package improvements. Refer to the Processors' Output table in Attachment B for more detail.

Performance Targets

- Introduction of 10 new dairy products into the market
- Number of plants integrating operational quality assurance systems
- Number of processors increasing profitability
- Number of new employees in processing sector

Results

- **New products introduced into the market**

By the end of the program, a total of 15 dairy products had been introduced into the market by various processors benefiting from the program's technical assistance. This number does not include other products that are in various stages of development or improvement. Also, Land O'Lakes introduced its highly fortified dairy- and soy-based product, Triumph, to potential distribution agents (PVOs) and to the two processing plants with UHT processing capabilities. Further development activities will be undertaken in the new phases of the Land O'Lakes project.

- **Number of plants integrating operational quality assurance systems**

The program provided technical assessments and recommendations to 12 processors in the implementation of a safety, hygiene and quality assurance measures. Of these twelve processors, eight firms actually implemented recommendations provided by the processing specialists. By the completion of this program most of these processors were able to consistently produce higher-quality dairy products to the demand of the local and regional export markets.

Eight (8) firms, namely Parmalat, Finta, Zammilk, Kalwa, Diamondale, Kaposhi, Sayyah, Dairy King and Moomba Farms, are committed to the Seal of Quality and are in the process of the first phase of its implementation. This core group of processors has agreed to implement an industry-governed code of practice coordinated by the Zambia Dairy Processors Association.

- **Number of processors increasing profitability**

By the end of September 2004, six processors had recorded increased profitability. Two firms indicated lower profits, while others reported stable profits levels. The firms who have reported represent approximately 85 percent of processed milk output.

- **Number of new employees in processing sector**

One hundred ten (110) new jobs were created by the end of the program. Although the ZDEI cannot lay a direct claim to all increases in employment being a result of the program activities, certainly the project has contributed to these positive results.

Table 2: Summary of Results – New Product Development and Improvement

NEW PRODUCT DEVELOPMENT AND IMPROVEMENT			
Indicator	Target	Achieved	Remarks
Number of new products introduced into the market	10	15	New products developed by processors receiving technical assistance from Land O'Lakes were drinking yoghurt, chocolate milk, lacto milk, butter, sour cream, fresh cream, long-life cream, maize-based milk drink, pasteurized milk, milk <i>maheu</i> , ice cream, cheeses, steri milk, skimmed milk and fortified milk
Number of plants integrating operational quality assurance systems	8	9	Twelve processors received technical assistance, while 9 had committed to the Seal of Quality and implemented recommendations to improve quality by the end of the program. These are Parmalat, Finta, Zammilk, Kalwa, Diamondale, Kaposhi, Sayyah, Dairy King, and Moomba Farms.
Number of processors increasing profitability	6	6	6 processors had recorded increased profitability by the end of the program. Two firms indicated lower profits, while others reported stable profits levels
Number of new employees in processing sector	100	110	110 new employees had been recruited in the sector by September 2004

3. Industry-Led Consumer Marketing Campaign

Performance Targets

- Establishment of one dairy association
- 10% increase in milk consumption
- Establishment of one new regional export market

Results

• Establishment of a trade association

Under the ZDEI program, the Zambia Dairy Processors Association (ZDPA) was established to facilitate the formation of a dairy association that would contribute to the development of the dairy industry in Zambia. ZDEI continued to build partnership with ZDPA through support in the development of marketing activities and the establishment of the association into a self-governing independent organization that can and will independently promote Zambian-produced dairy products to targeted consumer groups, in addition to providing assistance to the members in various issues that affect the dairy industry as a whole.

ZDEI initiated the development of the ZDPA constitution, which resulted in the members convening for the first Annual General Meeting held on June 21, 2004, during which the election of officers and the executive committee was held.

Through cost-sharing and matching contributions, ZDPA and its members contributed to the efforts through time, product sponsorship for marketing activities, support in development of the constitution, and input in production of advertising material.

• Increased consumption of milk

One of the main objectives of the marketing campaigns was to increase the overall consumption of milk among consumers. The program used dairy processors' output for various dairy products as a proxy for consumption.

A total of ten (10) processors benefited from the program, and whilst most of them managed to increase their overall output during the life of the program, a few were unable to because of internal operational problems. For instance, one of the main processors, Finta, stopped production September 2003 – December 2003 due to various financial constraints. Eastern Dairies recorded a reduction in output volume, which can be attributed to the fact that during the fiscal year 2004 they did not sell bulk milk. Excluding these two processors that showed a decrease in output levels, the increase in overall output for dairy products was approximately 6 percent by the end of the program. Imports of processed dairy products are also factored into the consumption equation. Most fluid milk imports are not documented sufficiently by Zambia customs and, hence, are not recorded in the statistical data of the country. However, Land O'Lakes estimates

imported milk and dairy products to be equivalent to approximately 200,000 liters per month.

- **Establishment of new regional markets**

ZDEI provided support and assistance to the ZDPA members in developing export markets within the region for Zambian-produced dairy products. Processors identified with export potential included Parmalat, Finta, Trade Kings and Kaposhi cheese. Of these processors, Parmalat and Kaposhi have made some efforts to develop export markets in the Democratic Republic of Congo and Malawi for long-life milk and cheese respectively. Trade Kings has established markets for milk *maheu* and milk shake (a dairy drink) to Malawi, Democratic Republic of Congo, Mozambique and Botswana and has plans to initiate exports to Tanzania and Angola.

Two processors that participated in the program, Parmalat and Kaposhi, developed export markets in the Democratic Republic of Congo through sales of long-life milk and cheese into Lubumbashi. With the removal of the ban on imported processed milk in Malawi, some dairy processors started exporting bulk milk into Malawi. Another processor, Trade Kings, established markets for their dairy products to Malawi, Democratic Republic of Congo, Mozambique and Botswana. A major achievement in developing export markets for the processors was the partnership between Land O'Lakes, ZDPA and RATES (Regional Agricultural Trade Expansion Support), a program that encourages liberalized trade in dairy products amongst COMESA countries and is set to benefit the processors further as they seek to obtain even more regional market access.

Table 3: Summary of Results – Industry-Led Consumer Marketing Campaign

INDUSTRY-LED CONSUMER MARKETING CAMPAIGN			
Indicator	Target	Achieved	Remarks
Establishment of one trade association conducting promotional, export market development, and educational activities	1 association	Zambia Dairy Processors' Association formed	The ZDPA was formed in June 2002
Increase in milk and dairy products consumption	10%	6%	Output of dairy processors was used as a proxy for consumption

INDUSTRY-LED CONSUMER MARKETING CAMPAIGN			
Indicator	Target	Achieved	Remarks
New regional markets established	1	4	Most processors did not have enough raw product supply to aggressively pursue export markets. Malawi, DRC, Mozambique and Botswana were the countries to which some dairy processors supported by Land O'Lakes were exporting by the end of the program.
Increase in value of dairy exports	25%	Inconclusive results	Most exports were informal and thus not accurately documented. Intermittent bans on dairy exports in the region also acted as a disincentive to the dairy export industry in Zambia

D. PUBLIC PRIVATE PARTNERSHIP

The marketing and production activities have stimulated demand in the local sector, and there has been great participation in the program from processors, specifically the Zambia Dairy Processors Association (ZDPA). Private sector enthusiasm was demonstrated through donations of dairy products to ZDEI marketing activities and monetary contributions to various marketing activities.

Promotional events conducted during the life of the program included sponsored activities during the following commemorations:

- World Milk Day
- Agricultural and Commercial Trade Show
- World Food Day
- Sports Sponsorship – Basketball

ZDPA initiated activities during the Zambia Basketball Association league basketball games and used this platform to promote consumption of dairy products through edutainment programs that communicated the nutritional benefits of dairy product consumption to primarily the youth (men/women, boys/girls). The league games cover Lusaka and Copperbelt provinces, and approximately 3,000 youth have been reached through these activities.

E. CHALLENGES

- One of the constraints that the program faced was the eventual pullout of ZATAC Ltd., Land O'Lakes' implementing partner under the raw product supply improvement component of the program. Program implementation was derailed due to uncertainty in ZATAC's commitment to support the program, culminating in its withdrawal from the GDA alliance in July 2004. This development provided a major challenge in meeting performance targets. To mitigate the effects of this withdrawal, Land O'Lakes had to reorient its strategy, which included recruitment of new staff to assist in implementation.
- A major problem faced by the milk collection centers was the risk and uncertainty inherent in running a farm-based business. Agriculture in general and dairy milk production in particular is dependent on climate and weather conditions that are often unpredictable. Production increases dramatically during the rainy season, when water and forage crops are both abundant. In contrast, production drops dramatically during the dry season, since the majority of small dairy farmers have not yet adopted measures to ensure stable milk production throughout the year. Because skill development is a slow process and many farmers are only beginning to appreciate dairy as an alternative farm enterprise, continued training and field observations to encourage adoption of technology transfer is important for any dairy development program being implemented in Zambia.
- Transportation of raw product by milk collection centers was another major constraint that impacted negatively on achieving optimum performance of the new collection centers. However, Land O'Lakes, with its partners, has been soliciting support from other financiers to leverage the USAID funds to assist in dealing with this challenge. As support will continue in the new program Land O'Lakes is implementing, this problem will be addressed.
- The main prevailing challenge with ZDPA was in getting the members to convene for meetings as most members are located in the regions outside Lusaka. Input and participation from processors towards the development of various activities has also proved to be a limitation and inadequate.
- The numbers for volume of export sales are inconclusive, as most exports are informal and are not documented. These sales are usually conducted by small traders who forego normal customs procedures. The temporary ban on imports of processed milk into Malawi created a problem for processors in Chipata. Problems with establishing a continual market with Congo comes mainly from delays and problems at the border post into Lubumbashi.

Attachment A: SUCCESS STORIES

1. NAMIANGA DAIRY CO-OPERATIVE SOCIETY (KALOMO)

Located in Kalomo district (population 165,000) 344 kilometers south of Lusaka, Zambia, Namianga Dairy Cooperative Society (NDCS) is one of the many farmer-owned cooperatives and associations that have benefited from the Zambia Dairy Enterprise Initiative (ZDEI). NDCS was formed in 1999 as an association comprised of farmers from the Kalomo district, spread over eight zones: Bbelo and Mutala in the southern part, Simakakata in the eastern part, Lubombo in the southeastern part, Kirnatorn in the western part, Dethani in the northwestern part, and Chikoli A and Chikoli B in the northeastern part.

The Problem: Kalomo district has experienced a significant reduction in the number of cattle due to the high incidence of mainly tick-borne diseases, of which Corridor has been the most predominant. Around 1990, the National Parastatal Company, Zambia Dairy Produce Board, which was the sole market for milk produced by the smallholder farmers, was closed. This state-owned company was the sole market for milk produced by the smallholder farmers around Kalomo, and due to this closure, farmers found themselves with no steady market for their milk.

This problem of livestock diseases and poor marketing systems reduced the number of improved dairy cows and, in turn, essentially wiped out the dairy industry. In early 2001, the private sector took a lead role in revitalizing the almost nonexistent industry. Since October 2001, the Zambia Dairy Enterprise Initiative, a USAID-sponsored program under the dairy directive, has been actively working with smallholder dairy producers and processors to improve the dairy industry.

Intervention: The association had an active membership of 23 out of the 150 registered members at the time the ZDEI intervened in 2002. The initial objective of the association was to help member farmers access seasonal agricultural input loans, particularly for maize production from the government between September and December, after which the co-operative would be inactive until the following year. However, after the interaction with ZDEI, the association expanded its objectives to include milk marketing. As a result, a milk collection center was established by Land O'Lakes in partnership with the co-operative. The farmers were trained in record keeping and other good agricultural practices. Due to this intervention and by virtue of its objective by 2002, Namianga changed its status from an association to a cooperative limited by share capital. With a mandate to conduct dairy business, it was transformed into Namianga Dairy Co-operative Limited with the motto "Profit more to serve more."

Powerful Results: As of September 30, 2004, the NDCS had an active membership of 116 out of the 150 registered members, with 85 (24 female) of these delivering milk.

NDCS has increased its daily milk collections from zero liters in 2002 to 183,817 liters as of September 30, 2004. The gross income from milk of members has increased from zero Zambian Kwacha (ZMK) in 2002 to ZMK147,053,600 (\$34,687) in 2004. The center now has created employment in the community, and three full-time workers have been employed.

Initially, the only service to NDCS members was to get fertilizer and seed on seasonal loan from government. Now services include private sources of cattle feed and veterinary services, farm supplies, and farmer credit. With the cooperative in place, the farmers are promptly paid every month for their milk deliveries. NDCS has used excess funds for servicing loans and service fees for use of the bulk tank from Land O'Lakes, which has already realized a total of ZMK16,000,000 (\$3,333.34) in nineteen months.

As an effort to create awareness and expand markets for its milk and milk products, NDCS actively participates in the local promotional campaigns, national agricultural shows, and trade fairs. Consequently, NDCS has plans to expand its marketing outlets to include two lock-up shops within Kalomo town and some vending points in the district markets. One farmer group has been formed in the Mukwela area with an agreement to deliver at least 200 liters of milk daily to NDCS. This group now constitutes a potential expansion area for the co-operative.

Future plans for NDCS include establishment of a new milk collection center building away from the current rented building at the market and acquisition of a 3000-liter milk tank with the help of its partner, Land O'Lakes, and increasing the services the co-operative renders to its members, which now should include artificial insemination services and sourcing of improved dairy cattle in order to improve productivity per animal. This, the chairperson believes, will be the best membership recruitment system. The chairperson feels that all the milk produced in Kalomo should be well-marketed and nothing should go to waste.

2. DAIRY FARMING, “THE LIFE CHANGER” – ESPHINE SIANSANDA

Esphine Siansanda, 45, mother of five children and married to Mr. John Siamate, has big dreams. Arriving at the Siamate’s farm, one is greeted by busy men expanding the zero-grazing facility for the cross-bred dairy animal that had just calved, with their two sons, Chabota and Komana, busy cleaning the milking parlor.

Before: Mrs. Siamate recalls that before the Land O’Lakes intervention, she had problems sending her children to school. Evidently this is a problem of the past because she has ably managed to pay for her daughter Munsanda’s high school examination fees. She laughs and boasts of the change in the diet at home, the ease with which she can pay medical fees and buy drugs for her animals, and now due to the Land O’Lakes training, her household is able to keep track of their monthly cash flows. She recalls that she used to make only about ZMK15,000 (\$3) per month from sales of sour milk. Now with the milk collection center, her monthly cash flow has increased to between ZMK300,000 and ZMK500,000 (\$63 - \$105) in the dry season, while in the rainy season it ranges from ZMK700,000 to ZMK1,000,000 (\$147 - \$210). Esphine has noticed that dairy farmers are doing good business, and she has never regretted her decision.

The Initiative: When asked why she has concentrated so much in this dairy activity, Mrs. Siamate laughs and explains that before Land O’Lakes started its activities in Kalomo, in the southern part of Zambia, she did not know that there was business in dairy. She explains further that she never cared about how to feed the animals, let alone the importance of feeding for productivity or prevention of diseases. Furthermore she never appreciated that animals needed good housing for them to be productive.

When asked how she moved into the dairy business, Mrs. Siamate says she got completely hooked on milk trading when Land O’Lakes helped the Namianga co-operative in the establishment of a milk collection center. She started delivering milk to the center on an experimental basis. Esphine recalls delivering her first two liters to the center on foot from her farm, about 15 kilometers from the center. At the end of the first month, she only managed to deliver 80 liters, and got her first pay. As she recalls, this was ZMK76,000 (\$16). After getting this money, she noticed that those who delivered more had a fatter pay check than hers. She resolved to become an example to other women. She started attending all the training sessions provided by the program, where she gained a lot of knowledge that started bearing fruit. Six months later she had delivered enough milk to the center that, with the proceeds, she managed to purchase a bicycle for transporting milk to the center. Most of her local breed cows have increased their production from one liter to at least two liters. She has also managed to buy a cross-breed cow, kept under semi zero-grazing conditions, who gives her up to 15 liters per day.

With her feed conservation program well established and the introduction of improved dairy breeds by Land O’Lakes under way, Esphine aims to raise her production per cow to at least 20 liters per day. She also expects to produce more milk in the dry season when

the price of milk is at its highest. Mrs. Siamate strongly believes in a year's time she will be a proud owner of A-grade cows. Esphine's enthusiasm reflects the general mood among dairy farmers in the Kalomo district of Southern province.

After: Eighteen (18) months since her first delivery to the center, Esphine is now a member of the board, runs the milk collection center, and supplies over 20 liters daily using her bicycle, with the help of her husband, who she says is a very supportive person. Esphine proudly explains that the bicycle was purchased with earnings from milk sales to the center. With annual earnings of over ZMK6,000,000 (\$1,263), Esphine can afford to pay her children's school fees and all domestic expenses and also save for her future investments.

She has now taken on an employee to help her with milk deliveries and maintenance of her cow housing.

Accomplishment: Esphine is becoming so successful that many women and men seek her for advice on how to begin in dairying and how to manage a cow for better milk yields and returns. They would like to know where to get capital, but she tells them that the initial capital is "themselves," explaining that anyone who is serious cannot be deterred by lack of money. She says, "Like me, they can borrow." Thanks to Land O'Lakes-USAID's assistance, the Kalomo milk collection center now exists to help milk farmers like Esphine.

3. DAIRY KING REAPS BOUNTIFULLY

Before: Dairy King is a small milk processing firm located in Lusaka. The company was established in 2000 by its owner Mr. Asif Essa, who saw an opportunity to produce value-added milk products for lower- and middle-income consumers located in the compounds of Lusaka. Dairy King began with a fermented milk product (“lacto”), which was packaged in a plastic container and delivered to small retail shops in the compounds. In the early stages of production, the firm was processing around 500 liters of milk per day.

The Initiative: In 2002, Land O’Lakes began assisting Dairy King in several aspects of their production and marketing. The firm received technical advice from processing specialists provided by Land O’Lakes under the Zambia Dairy Enterprise initiative. These specialists assisted the company by identifying specific technical improvements that increased the productivity and efficiency of the processing and storing of the milk products; recommending better handling, hygiene, packaging, and general quality assurance that would improve the quality of the milk; providing recommendations for upgrading and expanding processing and cooling equipment in order to increase the output of the processed products, and to accommodate the processing of new products; providing formulations for new products; and identifying sources for equipment and inputs.

Positive Results: As a result of some of the positive measures taken by Mr. Essa, the company has experienced steady sales growth from both its original product base and through the introduction of new products. Subsequently, Dairy King needed additional raw milk supply in order to satisfy demand for its products. Land O’Lakes assisted by linking Dairy King with two smallholder-owned milk collection centers near Lusaka, both of which were among those established through assistance provided by Land O’Lakes under the Zambia Dairy Enterprise Initiative. The firm has purchased additional equipment to accommodate expansion and has also purchased a building site for a new processing facility.

Dairy King’s success, at least in part, can be attributed to the successful integration of three major program focus areas under the ZDEI: involving the ZDPA (market development), product development and improvement (through Land O’Lakes assistance to Dairy King), and raw product supply improvement (through the milk collection centers). Dairy King has also been an active participant in the Zambia Dairy Processors Association (ZDPA), which was also established under the ZDEI.

The following is a summary of Dairy King’s progress under the ZDEI over the last three years.

Item	2001	2004
Quantity of milk processed – in liters	116,777	301,047
Number of products	1	4
Milk purchased from smallholders – in liters	-	151,703



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31st August 2004.

To Tim Durgan,
Land O' Lakes,
Lusaka.

R.E. Progress report for Dairy King Ltd from 01/10/03 to 31/08/04.

Dear Sir,

We would like to give you an update on our alliance with Palabana Dairy Institute through Kalwa Dairy and also with Buteko Co-operative. From both institutes during the above-mentioned period, we have collected the following amount in litres: -

<u>MONTH</u>	<u>PALABANA</u>	<u>BUTEKO</u>
October 2003	8953	6080
November 2003	10963	6316
December 2003	5720	9985
January 2004	6210	11043
February 2004	6375	6395
March 2004	7225	4569
April 2004	9435	5574
May 2004	7659	6800
June 2004	7796	6117
July 2004	6905	2728
August 2004	8855	2728
<u>TOTAL</u>	<u>86096</u>	<u>65607</u>

As you can see from the above table we have collected 86,096 and 65,607 litres from Palabana and Buteko respectively in 11 months.

Through these dairy institutes we have also made contact with 2 small-scale farmers who were giving milk to these centres and are now

supplying directly to our factory. These are Mazulu Farms from Palabana area and Mulela Farms from Buteko area.

Mazulu Farms started giving us in April 2004 and so far has supplied 15756 litres.

Mulela Farms started giving us in June 2004 and so far has supplied 12557 litres.

In the past one year our company has made steady progress in acquiring some more machinery to improve quality and increase production.

These machines are as follows: -

- 1) Semi automatic yoghurt filler (pneumatic machine). Price \$ 1500 US.
- 2) Fully automatic milk packing machine in sachets (pneumatic machine). Price \$ 8500 US.
- 3) Cold room to store finished products at 0 – 4 degrees. Price \$ 8000 US.

We have also acquired a small piece of land in the industrial area to put up our new factory in the future.

Finally we would like to take this opportunity to thank Land O Lakes for continuously supporting our industry and we hope to make more progress in the coming year.

Yours truly,

ASIF ESSA.

4. ZAMBIA DAIRY PROCESSORS ASSOCIATION ON THE MOVE



Since the privatization of the country's sole dairy parastatal company, the Zambia Dairy Produce Board in 1996, no dairy association existed that could take on challenges that affected the dairy industry and dairy processors within the country. As a result, the Land O'Lakes ZDEI program initiated the development of a dairy association that would contribute to the growth of the dairy industry in Zambia. In addition, the association would meet challenges related to the industry as well as provide its members with technical support that would improve and increase the consumer demand for quality dairy products in the country.

Accomplishment: With the support of the program, the Zambia Dairy Processors Association was developed and launched in Zambia on June 8, 2002, during the first June Dairy Month. The development of the association has brought processors together under one umbrella and has synchronized efforts to tackle industry-related issues that affect the processing industry. The continual support from Land O'Lakes throughout the project has resulted in ZDPA members taking a more active role in the association's development, which has resulted in the finalization of the ZDPA constitution, election of officers and establishment of an executive committee.

Under ZDPA, all member products are represented and recognized through all consumer-oriented marketing activities, which focus mainly on promoting the nutritional benefits of consuming dairy products. This provides all processors the ability to promote their individual products and brands to a larger consumer base. It has also created healthy competition in the market, which will result in processors putting more effort in improving the quality of dairy products distributed into the market to maintain brand loyalty with the consumers. The association has successfully implemented a generic dairy promotion and education campaign over the last two years that has stimulated demand for processed dairy products amongst targeted consumer populations.

Attachment B - SUMMARY OF ACTIVITIES

MILK COLLECTION CENTERS (MCCs)

	MCC Name	Average Farmer Milk Price in ZMK	Total Milk Collections (in liters)	New or Incremental Collections (liters)	Total Deliveries to Processors(liters)	New or Incremental Deliveries to Processors (liters)	New or Incremental Income to Farmers (US\$)	Number of Farmers Delivering Milk to Collection Centers
Existing MCCs	Siinde	700	27103	12504	19524	4925	\$ 2,221	11
	Magoye	800	699934	543147	693311	624706	96,464	140
	Monze	800	1066844	516755	337721	227564	91,777	115
<i>Sub Total</i>			1793881	1072406	1050556	857195	190,461	266
New MCCs	Palabana	850	196493	196493	196493	196493	43,622	15
	Choma	850	271523	271523	61258	61258	72,334	55
	Nakasangwe	600	71666	71666	70466	70466	9,164	109
	Kalomo	800	183817	183817	58742	58742	34,687	85
	Buteko	1200	49125	49125	49125	49125	13,087	8
	Sikaunzwe	650	40345	40345	0	0	5,374	23
	Ngwezi		0	0	0	0	\$ -	0
	Kazungula	700	162590	130462	22617	-3359	23,170	40
<i>Sub Total</i>			975559	943431	458701	432725	201,438	335
Grand Total			2769440	2015837	1509257	1289920	\$391,900	601

PROCESSORS' OUTPUT

Name of Processor	Dairy Products Considered	Daily Processing Capacity (Liters)	Baseline Output (Total Sep 2001 – Aug 2002)	Total Output (Sep 2003 – Aug 2004)	Percent (%) Increase
Parmalat	Fresh milk, long-life milk; sour milk; butter; cheese	60,000	17,186,100	18,245,600	+ 6
Dairy King	Fresh milk, sour milk, yoghurt drink, chocolate milk	< 1,000	116,777	301,047	+ 157
Diamondale	Fresh milk, sour milk, flavored milk, cheese, butter	5,000	2,524,764	3,860,694	+ 52
Kaposhi	Various cheese products	2,500	1,111,790	1,430,160	+ 28
Sayyah	Yoghurt, sour milk, fresh milk	< 1000	253,142	379,005	+ 49
Zammilk	Fresh milk / lacto	10,000	4,110,000	5,600,000	+ 36
Cedrics	Fresh milk	1,000	676,000	720,000	+ 6
Finta	Long-life milk	5,000	6,630,768	1,095,000	- 83
Maplehurst	Cheese, fresh milk	1,000	104,930	207,250	+ 97
Eastern Dairies	Fresh milk, sour milk, flavored milk, yoghurt	1,000	196,930	163,598	- 16